IT IS CLAIMED:

1. A kit for detecting each or any of a plurality of known, selected nucleotide target sequences, comprising:

(a) a set of electrophoretic tag (e-tag) probes, the set comprising j members, and each of said e-tag probes having the form:

$(D, M_j) - N - T_j$, where

(i) D is a detection group comprising a detectable label;

(ii) T_j is an oligonucleotide target-binding moiety having a sequence of nucleotides U_i connected by intersubunit linkages $B_{i, i+1}$, where i includes all integers from 1 to n, and n is sufficient to allow the moiety to hybridize specifically with a target nucleotide sequence;

(iii) N is a nucleotide joined to U_1 in T_j through a nuclease-cleavable bond;

(iv) M_j is a mobility modifier having a charge/mass ratio that imparts a unique and known electrophoretic mobility to a corresponding e-tag reporter of the form $(D, M_j) - N$, within a selected range of electrophoretic mobilities with respect to other e-tag reporters of the same form in the probe set, where the e-tag reporter $(D,M_j) - N$ does not itself contain nuclease-cleavable bonds; and

(v) (D, M_j)- includes both $D - M_j -$ and $M_j - D -$; and

(b) a capture agent effective to bind to uncleaved and/or partially cleaved probes, said uncleaved and/or partially cleaved probes being produced by:

(i) contacting the target sequences with the set of probes under conditions that allow hybridization of the target-binding moiety to complementary target sequences, and

(ii) treating the hybridized target sequences with a nuclease under conditions effective to cleave target-hybridized probes at their $N - U_1$ linkages, thereby producing a mixture of one or more corresponding e-tag reporters of the form $(D, M_j) - N$, and uncleaved and/or partially cleaved probes, said capture agent being effective to

(i) impart a mobility to the probes bound to capture agent that prevents the probes from electrophoretically migrating within said range of electrophoretic mobilities or

(ii) immobilize the probes on a solid support.

2. The kit of claim 1, wherein each probe has the form $D - M_j - N - T_j$ and the corresponding e-tag reporter has the form $D - M_j - N$.

3. The kit of claim 1, wherein each probe has the form $M_j - D - N - T_j$ and the corresponding e-tag reporter has the form $M_j - D - N$.

4. The kit of claim 1, for use in detecting a single nucleotide polymorphism in a target sequence, wherein the oligonucleotide sequence T_j is selected to allow 5'-probe hybridization to the target sequence only if the target sequence contains a designated base at the site of the polymorphism.

5. The kit of claim 1, wherein at least one nucleotide U_i, $i \geq 1$ in said oligonucleotide contains a capture ligand capable of binding specifically to said capture agent.

6. The kit of claim 5, wherein the capture ligand is biotin, and the capture agent is avidin or streptavidin.

7. The kit of claim 5, wherein the capture ligand is an antigen and the capture agent is an antibody or antibody fragment that binds specifically to the antigen.

8. The kit of claim 1, wherein the capture agent is a polycation and the oligonucleotide has a negatively charged backbone.

9. The kit of claim 1, wherein the N - U_1 linkage is a phosphodiester bond, and the nuclease-resistant bond(s) in the target-binding moiety is one or more linkages selected from the group consisting of thiophosphate, phosphinate, phosphoramidate, amide, and boronate linkages.

10. The kit of claim 9, wherein at least one nucleotide U_i, $i \geq 1$ in said oligonucleotide contains a capture ligand capable of binding specifically to said capture agent.

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